



December 8, 2020

Randy Duvall
Mapleton School District #32
10878 E. Mapleton Road
Mapleton, Oregon 97453

Via email: rduval@mapleton.k12.or.us

Regarding: High School – Short-Term Radon Testing
10878 E. Mapleton Road
Mapleton, Oregon 97453
PBS Project 52593.000

Dear Mr. Duval:

From November 17th, to November 19th, 2020 PBS Engineering and Environmental Inc. (PBS) performed short-term radon testing for the High School Building located at 10878 E. Mapleton Road in Mapleton, Oregon.

The Environmental Protection Agency (EPA) and Oregon Health Authority (OHA) recommend that buildings be tested for radon, and that any radon concentrations be maintained below 4.0 picocuries per liter (pCi/L) of air. PBS used Air Chek, Inc., single-use, short-term radon test kits to measure radon levels in frequently occupied rooms that are in contact with the ground or above unoccupied basements or crawlspaces. **No samples taken by PBS were found to be above the EPA action level of 4.0 pCi/L.**

In addition to the single-use, short-term radon test kits deployed in frequently occupied rooms, four (4) sample blanks, three (3) spike samples, and three (3) duplicates were analyzed by Air Chek, Inc. in Mills River, North Carolina for quality control (QC) purposes.

The following table presents the results of all tests conducted during this study. Results are listed in pCi/L.

Kit Number	Start Date	End Date	Room	Floor	Result (pCi/L)	Comments
9527809	11/17/2020	11/19/2020	OFFICE 204	1	< 0.3	
9527810	11/17/2020	11/19/2020	OFFICE 203	1	< 0.3	
9527811	11/17/2020	11/19/2020	OFFICE 202	1	< 0.3	
9527812	11/17/2020	11/19/2020	LOUNGE 205	1	< 0.3	Duplicate RPD: 0%
9527813	11/17/2020	11/19/2020	LOUNGE 205	1	< 0.3	
9527814	11/17/2020	11/19/2020	MAIN OFFICE 222	1	< 0.3	
9527815	11/17/2020	11/19/2020	PRINCIPAL 223	1	0.5	
9527816	11/17/2020	11/19/2020	ROOM 225	1	0.8	
9527817	11/17/2020	11/19/2020	ROOM 227	1	0.6	
9527818	11/17/2020	11/19/2020	GYM WEST	1	0.7	
9527819	11/17/2020	11/19/2020	GYM EAST	1	0.8	
9527820	11/17/2020	11/19/2020	GIRLS LOCKER	1	< 0.3	
9527821	11/17/2020	11/19/2020	BOYS LOCKER	1	1.6	

Kit Number	Start Date	End Date	Room	Floor	Result (pCi/L)	Comments
9527822	11/17/2020	11/19/2020	WEIGHT ROOM	1	< 0.3	
9527823	11/17/2020	11/19/2020	BOYS LOCKER OFFICE	1	0.7	
9527824	11/17/2020	11/19/2020	STUDENT COMMONS	1	< 0.3	Duplicate RPD: 0%
9527825	11/17/2020	11/19/2020	STUDENT COMMONS	1	< 0.3	
9527826	11/17/2020	11/19/2020	LIBRARY	1	1.3	
9527827	11/17/2020	11/19/2020	SCIENCE ROOM	1	0.8	
9527828	11/17/2020	11/19/2020	SCIENCE BEAKER ROOM	1	0.9	
9527829	11/17/2020	11/19/2020	SCIENCE STORAGE ROOM	1	1	
9527830	11/17/2020	11/19/2020	ROOM 218	1	1.2	
9527831	11/17/2020	11/19/2020	ROOM 217	1	0.8	
9527832	11/17/2020	11/19/2020	ROOM 212	1	< 0.3	
9527835	11/17/2020	11/19/2020	RESOURCE 213	1	< 0.3	
9527866	11/17/2020	11/19/2020	236	1	0.8	Duplicate RPD: 22%
9527867	11/17/2020	11/19/2020	236	1	1	
9527865	---	---	---	---	< 0.3	Blank Device
9527871	---	---	---	---	< 0.3	Blank Device
9527872	---	---	---	---	< 0.3	Blank Device
9527873	---	---	---	---	< 0.3	Blank Device
9527803	11/14/2020	11/16/2020	---	---	Reference: 27.6 Measured: 27.2	Spike RPE: 1%
9527804	11/14/2020	11/16/2020	---	---	Reference: 27.6 Measured: 26.9	Spike RPE: 3%
9527805	11/14/2020	11/16/2020	---	---	Reference: 27.6 Measured: 27.9	Spike RPE: 1%

Simultaneous measurement results that are both less than (<) 4.0 pCi/L shall agree with a Relative Percent Difference (RPD) of less than (<) 67 percent. RPD is calculated by taking the difference between 2 results, dividing by the average the results, and multiplying by 100.

Relative Percentage Error (RPE) is calculated by taking the difference between a measured value and reference value, dividing by the reference, and multiplying by 100. A trend in RPE values that are more than 30% should be investigated.

No testing abnormalities were noted at the time of the investigation.

See the attached laboratory analysis report for more details.

In addition to the EPA recommendation that radon concentrations not exceed 4.0 pCi/L, OHA recommends that the following steps be conducted based on the results of a room’s initial short-term test:

- **If the result is less than 2.0 pCi/L**, school districts are required to test again every 10 years, per Oregon Revised Statute 332.166-167.
- **If the result is between 2.0 pCi/L and 4.0 pCi/L**, consider fixing (i.e., lowering) the radon in that room.

- **If the result is from 4.0 pCi/L to 8.0 pCi/L**, perform a follow-up measurement of that room using a long-term test. This test should be conducted over as much of a nine-month school year as possible, when the room is likely to be occupied. If that result is equal to or greater than 4.0 pCi/L, the radon in the room should be fixed (i.e., lowered).
- **If the initial short-term test result is equal to or greater than 8.0 pCi/L**, conduct a second short-term test and average its result with the initial short-term test result. If the average of the two is equal to or greater than 4.0 pCi/L, radon in the room should be fixed (i.e., lowered).

Note: A great difference in the results of the short-term tests may indicate a flaw in the testing process. Investigate and consider retesting. For situations in which one of the test results is equal to or greater than 4.0 pCi/L, if the higher result is two or more times the lower result, repeat the test.

LIMITATIONS OF SCOPE

This study was limited to the tests and locations as previously indicated. The site as a whole may have other environmental concerns that will not be characterized by this study. The findings and conclusions of this work are not scientific certainties, but probabilities based on professional judgment concerning the significance of the data gathered during the course of this investigation. PBS is not able to represent conditions on the site or adjoining sites beyond those detected or observed by PBS.

Please feel free to contact me at 541.255.6182 or daniel.lyons@pbsusa.com with any questions or comments.

Sincerely,

Daniel Lyons
Industrial Hygiene Technician

Reviewed by: JH

Attachment: AirChek, Inc., Laboratory Analysis Report

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Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
9527809	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	OFFICE 204	MAPLETON SD	1	< 0.3
9527810	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	OFFICE 203	MAPLETON SD	1	< 0.3
9527811	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	OFFICE 202	MAPLETON SD	1	< 0.3
9527812	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	D LOUNGE 205	MAPLETON SD	1	< 0.3
9527813	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	LOUNGE 205	MAPLETON SD	1	< 0.3
9527814	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	MAIN OFFICE 222	MAPLETON SD	1	< 0.3
9527815	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	PRINCIPAL 223	MAPLETON SD	1	0.5
9527816	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	ROOM 225	MAPLETON SD	1	0.8
9527817	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	ROOM 227	MAPLETON SD	1	0.6
9527818	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	GYM WEST	MAPLETON SD	1	0.7
9527819	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	GYM EAST	MAPLETON SD	1	0.8
9527820	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	GIRLS LOCKER	MAPLETON SD	1	< 0.3
9527821	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	BOYS LOCKER	MAPLETON SD	1	1.6
9527822	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	WEIGHT ROOM	MAPLETON SD	1	< 0.3
9527823	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	BOYS LOCKER OFFICE	MAPLETON SD	1	0.7
9527824	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	D STUDENT COMMONS	MAPLETON SD	1	< 0.3
9527825	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	STUDENT COMMONS	MAPLETON SD	1	< 0.3
9527826	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	LIBRARY	MAPLETON SD	1	1.3
9527827	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	SCIENCE ROOM	MAPLETON SD	1	0.8
9527828	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	SCIENCE BEAKER ROOM	MAPLETON SD	1	0.9
9527829	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	SCIENCE STORAGE ROOM	MAPLETON SD	1	1.0
9527830	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	ROOM 218	MAPLETON SD	1	1.2
9527831	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	ROOM 217	MAPLETON SD	1	0.8
9527832	2020-11-17	5:00 pm	2020-11-19	5:00 pm	70	MAPLETON SD	MAPLETON HS	ROOM 212	MAPLETON SD	1	< 0.3
9527835	2020-11-17	5:00 pm	2020-11-19	6:00 pm	70	MAPLETON SD	MAPLETON HS	RESOURCE 213	MAPLETON SD	1	< 0.3
9527866	2020-11-17	7:00 pm	2020-11-19	7:00 pm	70	MAPLETON SD	MAPLETON HS	D 236	MAPLETON SD	1	0.8
9527867	2020-11-17	7:00 pm	2020-11-19	7:00 pm	70	MAPLETON SD	MAPLETON HS	236	MAPLETON SD	1	1.0

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Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
9527865	2020-11-17	8:00 pm	2020-11-19	8:00 pm	70	MAPLETON SD	SHOP	HALLWAY - B	52591	1	< 0.3
9527871	2020-11-17	8:00 pm	2020-11-19	8:00 pm	70	MAPLETON SD	HIGH SCHOOL	HALLWAY - B	52591	1	< 0.3
9527872	2020-11-17	8:00 pm	2020-11-19	8:00 pm	70	MAPLETON SD	HIGH SCHOOL	HALLWAY - B	52591	1	< 0.3
9527873	2020-11-17	8:00 pm	2020-11-19	8:00 pm	70	MAPLETON SD	ELEMENTARY SCHOOL	HALLWAY - B	52591	1	< 0.3

Air Chek 1936 Butler Bridge Rd, Mills River, NC 28759-3892 Phone: (828) 684-0893 Fax: (828) 684-8498

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Kit Number	Start Date	Start Time	End Date	End Time	Temp.	Facility	Building	Room	Project ID	Floor	Result
9527803	2020-11-14	8:00 am	2020-11-16	8:00 am	70	MAPLETON SD	HIGH SCHOOL	HALLWAY - S	52591	1	27.2
9527804	2020-11-14	8:00 am	2020-11-16	8:00 am	70	MAPLETON SD	ELEMENTARY SCHOOL	HALLWAY - S	52591	1	26.9
9527805	2020-11-14	8:00 am	2020-11-16	8:00 am	70	MAPLETON SD	SHOP	HALLWAY - S	52591	1	27.9

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